ECOCHEM
Data Quality

PROCEDURES FOR NRDA SAMPLE ARCHIVE SHIPMENT

Chain-of-Custody

1. Use the original chain-of-custody (COC) if it still has at least one set of "Relinquished By" and "Received By" lines remaining.

2. If the original COC does not have additional spaces for "Relinquished By" and "Received By", a new COC (form is attached to these instructions) should be prepared and included with a copy of the original COC. List each sample or inventoried container (e.g., cassette of vials, etc.) on a separate line, identifying with original field ID, laboratory ID and description or other identifier.

3. Record on the COC, as appropriate:
   - Volume or quantity
   - Comments – apparent preservation problems or custody concerns
   - Missing samples or those transferred to another facility

4. Cross check all sample identifiers from container to COC before packaging the samples.

5. Sign and date the "Relinquishing Signature" block on the COC. Make a copy for your records. Place the COC (and original COCs, if new COC prepared) in a zip top bag and tape it to the inside lid of the appropriate cooler.

Packaging/Shipping

1. Sample shipments are best made early in the week. Samples should not be shipped on Friday, there is no access to the archive for Saturday deliveries.

2. Wrap or package each item, as appropriate, and place in cooler/package. Bubble wrap is a good cushion. **Dry ice or other coolants are not cushioning material, because the jars will become loose as the ice evaporates or melts.** When shipping single items, mark them to stand out from packing material with colored tape or label on the outside of bubble wrap.

3. Place dry ice (see below for dry ice info) in the cooler ***so that the contents will remain at temperature for a minimum of 48 hours***. Using more than five kilograms of dry ice is recommended; increase the amount used during warm or hot weather.

   - **<u>Do not break</u> dry ice into smaller pieces, it evaporates more quickly and does not maintain samples at cold temperature as long.**
   - **The drain plug on the cooler must be taped <u>closed</u> to prevent ventilation of carbon dioxide (CO_2) gas that occurs when the dry ice vaporizes.**
   - **Indicate that dry ice has been used as a coolant on the shipping documents.**

- **Frozen gel packs may be used as a supplemental coolant, especially during warmer months. Do not use wet ice.**
- **When using more than five kilograms (>5 kg) of dry ice a "Dangerous Goods" label is required (see attached). If you need "Dangerous Goods" labels please contact Melissa Swanson (mswanson@ecochem.net).**

4. Seal the lid shut. Wrap filament /shipping tape around either end of the cooler (three times) to ensure a tight seal.

5. Place a minimum of two COC seals on the cooler, one seal on the front and one seal on the back or side of the cooler in such a manner that if the container was opened, the seals would have to be broken.

6. Sign and date the COC seals, which are placed on the outside of the cooler. The same person who signed the COC record should do this.

7. Place clear shipping tape over the COC seals.

8. Adhere the appropriate address label on the top, outside surface of the cooler with clear shipping tape.

9. Fill out appropriate shipping documents:

   - Coolers are to be sent by FedEx **Priority Overnight** service or a comparable, overnight, traceable service. FedEx is the easiest company to ship with when using dry ice.
   - The cooler/package should be sent to:

     Melissa Swanson / Christopher Wendle
     NOAA Building 32
     7600 Sand Point Way NE
     Seattle, WA USA 98115-0070

   - The contact phone number on the airbill should be the EcoChem number:

     (206) 233-9332 / (206) 617-9752

10. Email notification of shipment, including tracking number(s) to:

    Melissa Swanson – mswanson@ecochem.net
    and Christopher Wendle – cwendle@ecochem.net

EcoChem staff will:

- Coordinate with NOAA Shipping and Receiving Department, on the day of arrival.
- Sign the COC in the "Received By" block
- Make sure that the cooler/package(s) are placed into the archive freezer at NOAA ARP West (Bldg. 32).

Dry Ice Shipping Regulations

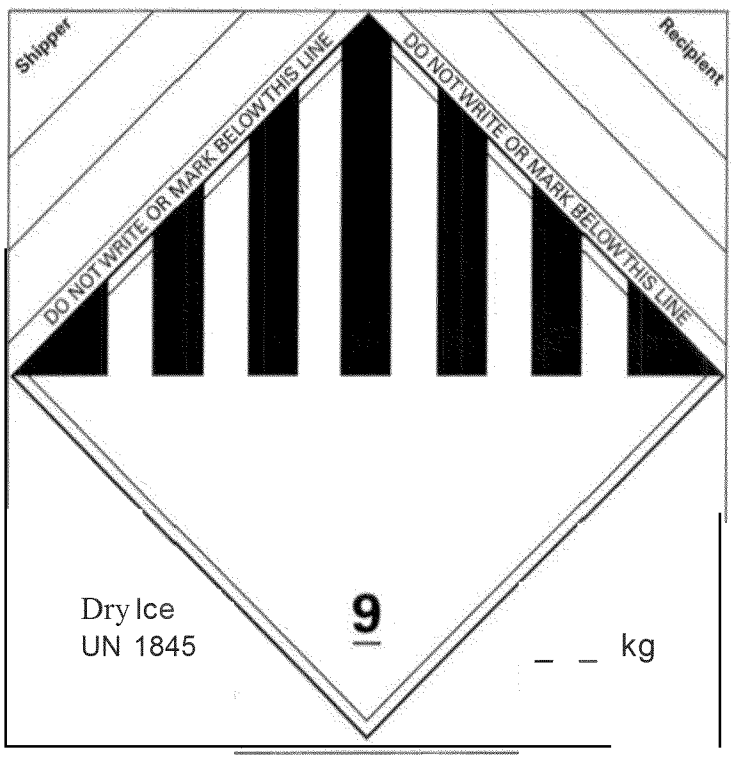
Dry ice (or carbon dioxide solid, UN 1845) is considered a dangerous good/hazardous material for air transport and requires special handling. Shippers are also required to have function-specific dangerous goods training as outlined in 49CFR (Code of Federal Regulations) 172.700.

When dry ice changes to carbon dioxide gas in enclosed spaces like aircraft cargo holds, it displaces oxygen. The design and construction of packaging used for dry ice shipments must prevent the buildup of pressure that could cause rupturing. Dry ice must never be placed in an airtight container.

When shipping with dry ice, you must provide correct identification, classification, markings and labeling on your outer carton to comply with current requirements in the International Air Transport Association (IATA) dangerous goods regulations.

The following permanent markings are required on the outer packaging of all IATA dry ice shipments:

- "Dry Ice" or "Carbon Dioxide Solid."
- "UN 1845."
- Net weight of dry ice in kilograms.
- Name and address of the shipper.
- Name and address of the recipient.



Airbills must have the following: 1) UN 1845, Dry Ice and 2) The weight of dry ice within the cooler in kilograms (kg). Dry ice weight only (2 lb = 1 kg).

Unless the package is too small, place label on package so the hazard marking is in a 45 degree angle on point (*).

If the address of the shipper and recipient is not durably marked on the package, print it above (DO NOT WRITE ON OR MARK IN THE DIAMOND AREA ON THE CLASS 9 LABEL).

FOIA/FOIL EXEMPT – Privileged and Confidential Page: ____of ____

NOAA ARCHIVE CHAIN OF CUSTODY RECORD

Collector:	
Contact Name:	Phone:
Shipping Date:	Total number of items:_____

Field Sample ID:	Sample ID:	Date Collected:	Description (including jar size):	Preservation:	Comments:

Relinquished by:	Accepted by:
Signature	Signature
Print Name	Print Name
Date Time	Date Time
Relinquished by:	Accepted by:
Signature	Signature
Print Name	Print Name
Date Time	Date Time
Sample receipt information:	